On the Magnetism developed in Copper and other Substances during Rotation. In a Letter from Samuel Hunter Christie, *Esq. M.A. &c. to* J. F. W. Herschel, *Esq. Sec. R.S. Communicated by* J. F. W. Herschel, *Esq.* Read June 16, 1825. [*Phil. Trans.* 1825, *p.* 497.]

Mr. Christie in this communication gives an account of some experiments on the development of magnetism in copper by rotation. He corroborates by his own experience the results obtained by Mr. Babbage and Mr. Herschel, in which a disc of copper was set in rotation by the rotation of one or more magnets beneath it, both in the case when poles of the same name were immediately below the disc and when of a contrary name. The action appeared equally intense in both cases, and from this circumstance the author concludes the magnetism thus communicated to the copper to be extremely transient. The experiment was varied by combining the revolving magnets differently, and the results are stated.

The next experiments of Mr. Christie were directed to the determination of the law according to which the force diminishes as the distance between the disc and magnets increases. It seems to follow from these experiments, that when a thick copper plate is made to revolve under a small magnet, the force tending to deviate the needle is directly as the velocity, and inversely as the fourth power of the distance; but that when magnets of considerable size are made to revolve under these copper discs, the diminution follows more nearly the ratio of the inverse square of the distance, or between the square of the cube, though not in any constant ratio of an exact power.

The author then investigates the law of force when copper discs of different weights are set in rotation, which for small distances appear proportioned to the weights of the discs, but for greater ones appear to vary in some higher ratio.

On the annual Variations of some of the principal Fixed Stars. By J. Pond, *F.R.S. Astron. Royal.* Read June 16, 1825. [*Phil. Trans.* 1825, *p.* 510.]

This communication consists of a table stating the annual variations of 23 of the principal fixed stars, as deduced from Dr. Brinkley's observations, and those of the Astronomer Royal. On these Mr. Pond remarks, that out of 16 stars observed at Dublin, 13 either indicate a southern deviation, or at least are not inconsistent with it, and that of these 13, about half indicate a greater deviation than that assigned by Mr. Pond himself. The other half a less, while the three remaining stars deviate northwards.

Mr. Pond further remarks, that the examination of this table is calculated rather to increase than to diminish scepticism on the subject of the determination of such very small quantities by astronomical observations. He concludes by disclaiming all intention of placing